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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,852	10/24/2001	Manoj Ramprasad Shah	RD-29526	9829

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GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
SCHENECTADY, NY 12301-0008

EXAMINER

MAI, ANH T

ART UNIT PAPER NUMBER

2832

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/682,852

Applicant(s)

SHAH ET AL.

Examin r

Anh T. Mai

Art Unit

2832

-- Th MAILING DATE f this c mmunication appears on the c ver sheet with the correspondence address --

## Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-42,44-57 and 60-62 is/are pending in the application.
- 4a) Of the above claim(s) 4-13,48 and 62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,14-19,21-26,29-37,39,41,42,45-47,50-56 and 61 is/are rejected.
- 7) ☒ Claim(s) 20,27,28,38,40,44,49,57 and 60 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

In the instant application, claims 1-3, 14-42, 44-47, 49-57, 60-61 have been considered.

Claims 4-13, 48, 62 have been withdrawn from further consideration.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-3, 14-15, 21, 25-26, 29, are rejected under 35 U.S.C. 102(a) as being anticipated by Kalsi et al. [6275365].

Kalsi discloses a fault current limiter 10 [FCL] comprising air core flat clock spiral copper inductor 14 of insulation layer 33 and conductive 34, two end members 19, 20 of FCL [see figures 3-4]. With respect to claims 14-15, the conductor having opening at the center where liquid cryogen flows thru the center tube of the conductor [column 7; lines 3-10]. With respect to claim 26, Kalsi discloses insulation layer 33 being made of glass epoxy or polyimide [column 5; lines 6-7]. With respect to claim 29, Kalsi discloses the FCL can be incorporated within other components of the system including within a housing [column 7; lines 30-35].

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16-17, 22-24, 30-37, 39, 41-42, 45-47, 50-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalsi in view of Hara et al. [5617280].

Kalsi discloses the FCL could be incorporated with a housing but did not clearly recite a housing for the FCL. Hara discloses housing 1 contains current limiter 2 [figure 1, column 3; lines 51-53]; Hara also discloses the openings for passing liquid helium between coil layers [column 5, lines 7-14]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use housing as taught by Hara to Kalsi. The motivation would have been to accommodate the current limiting units in a system. Therefore, it would have been obvious to combine Hara with Kalsi.

With respect to claims 41-42, 45, 52, Hara discloses three current limiting units 12w, 12u, 12v in the current limiter 2 [see figure 2]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use three inductors as taught by Hara to Kalsi. The motivation would have been to provide different configurations suitable for individual application of current carrying conductor. Therefore, it would have been obvious to combine Hara with Kalsi.

With respect to claims 46-47, 61, Hara discloses a refrigerator may be provided for cooling the coolant in the current limiter [column 6; lines 58-64].

With respect to claim 54, Kalsi discloses insulation layer 33 being made of glass epoxy or polyimide.

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5. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalsi.

Kalsi discloses the claimed invention except for fluid being air/water/oil or a combination thereof. It would have been an obvious matter of design choice, since applicant has not disclosed that air/water/gas solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with liquid cryogen. *Ethicon, 93 F.3d at 1582 n.7, 40 USPQ2d at 1027 n.7 (quoting In re Vickers, 141 F.2d 522, 525, 61 USPQ2d 122, 125 (CCPA 1944))*.

***Allowable Subject Matter***

6. Claims 20, 27-28, 38, 40, 44, 49, 57, 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 20 recites inter alia, casing comprises *a tube wrapped around the electrically conductive material*.

Claim 20 recites inter alia, *insulation layer comprises a shrink wrap*.

Claims 38, 40, 57 recite inter alia, *a stack of magnetic laminations between one of the walls and the spiral inductor*.

Claim 49 recites inter alia, *auxiliary cooling unit comprises a heat pipe*.

The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

7. Applicant's arguments with respect to claims 1-3, 14-42, 44-47, 49-57, 60-61 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

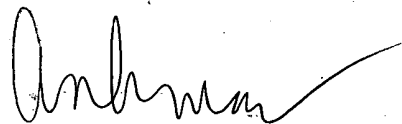
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Turcotte et al. [4922156] ; Toki [5561410] ; Downie [5450266] ; Okamoto et al. [4994932].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh T. Mai whose telephone number is 571-272-1995. The examiner can normally be reached on 5/4/9 Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**ANH MAI**  
**PRIMARY EXAMINER**